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EFFECT OF YOGA ON THE REDUCTION OF GLUCOSE LEVEL IN THE BLOOD- DIABETES MELLITUS

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ABSTRACT

Modern society is aware of the advantages of yogic exercise and breathing. Yogic exercise directly effects all the systems and organs of the body. This study examining behavioural approaches to alleviate the intensity and prevent progress of diabetes mellitus. And to enhance diabetes self-management by practising yoga. There were 22 male and 8 female participants with diabetes .Intervention program was for 3 months. Before the intervention program started, 2nd and 3rd months blood report on fasting and after food were collected. Comparison of pre- post blood test have been done. There was a significant difference seen at 1% level. No significant difference found in relation with gender as well as with age span of the participants. The dose of the medication regimen remained the same under the protocol. A change in the life style adopted by the participant was that the practice of yoga for one hour. Along with a dietary change, preferably vegetarian food.

Finding was, even though diabetes is a progressive disorder there is a continuous fall in the level of blood glucose of the participants. Clinical significance is not assured because the blood sugar level not attained the control level. While practising yogic exercise, eating healthier, and losing weight can enable to improve patients' glycaemic control. The anticipated requirement for additional medication is an unwanted burden for patients. Patients are aware that diabetes is typically a progressive disorder. Choosing the right therapy to prevent the speedy progress of the disease is essential. So that the worsening dysfunction of the organs can be checked. Systematic and regular practice of yoga can strengthen patient's physical endurance and can improve physiological and psychological functioning.

KEY WORDS: Yogic Exercise, Yogic Breathing, Diabetes Mellitus.

INTRODUCTION:

Yogic practices: Asanas and breathing give direct and tangible benefits to everyone regardless of their aims. Physical as well as mental cleaning and strengthening is one of yoga's most important achievements. Swamy Sathyananda Saraswathi (2008) It is the person to function psychologically as well as physiologically. This study is to find out the effect of yogic exercise on the reduction of glucose level in the blood. the incidence of type 2 diabetes mellitus T2DM is increasing world wide, and now it has become a significant public health problem. Depending on the work and situation everyday activities will be affected even with slight form of cognitive impairment, which requires various cognitive domains. Diabetes mellitus is a metabolic disorder that either arrives during the early years of growth(juvenile diabetes) or later in life or is called as maturity onset diabetes. It is observed as the body's inability to effectively regulate the glucose balance and leads to severe complications. Neuropathy, retinopathy, nephropathy studies have reported that "the brain can neither synthesizes nor store more than a few minutes worth glucose. A continuous systematic supply is necessary to keep normal cerebralmetabolism".(Srivasthava,2013) The needs of diabetic patients are not only limited to adequate glyceamic control but also correspond with preventing complications disability limitation and rehabilitation.

NEED OF THE STUDY:

Diabetes can affect many parts of the body, such as heart disease and stroke, blindness, kidney failure, and lower limb amputation. Diabetic foot, diabetes in organs, diabetic skin, hyper glycemia. (Jerrold,M and Olefsky, 2001) These are all associated with serious complications. And it is associated with morbidity and mortality. It projects as national burden. A multidisciplinary effort is essential for preventing this disease. The implementation of new methods at low cost are needed which can be administered to all patients. In this study the researcher introduce yogic exercise as a therapeutic procedure.

METHOD:

Sample size was 30.There were 22 male and 8 female. All of them were patients. and under the treatment for diabetes. They were told about the adverse consequences of the disease and the advantages of yogic exercise.10 postures of yogasans and breathing exercise were taught them. Standing postures, sitting postures, forward bending, back bending etc were included .And 4 type of breathing exercise also were included. After a three days training one hour each intervention program have begun. A meeting with participants were arranged on every Friday. And it was continued for three months. At the beginning of each month their blood report were collected. And last month after a drug free period of three days blood report have been examined. Comparison of blood reports revealed a noticeable decrease in the blood level glucose.

Sample

Sample size was thirty. 22 male and 8 female. They were selected from different offices from a Civil station. To find out patients with out morbidities and who were willing to participate in the intervention program were selected. So the selection was under purposive convenient ground.

Measurements:

Medical history, glucose level on fasting, and after food one and half hour- consecutive three months.

OBJECTIVES:

To find out the effect of yogic exercise and breathing on the reduction value of glucose level in the blood.

Dependent variable:

Blood glucose

Independent variable:

Yogic exercise and breathing

Data sheet:

Data sheet for recording glucose level in the blood

DATA ANALYSIS:

Table 1: Test of normality

Blood Sugar	Kolmogorov-Smirnov a			Sharpiro-wilk		
	Statistic	df	Sig	Statistic	df	Sig
1st month	.088	30	.200*	.976	30	.717
Fast After food	.091	30	.200*	.979	30	.701
2nd month	.124	30	.200*	.968	30	.486
Fast After food	.102	30	.200*	.958	30	.282
3rd month	.123	30	.200*	.934	30	.063
Fast After food	.182	30	.013	.906	30	.012

*This is a lower bound of the true significance.

a. Lilliefors Significance correction. Test of normality.

The Table 1, given below shows the variables are distributed normally except' third month after food.

Table 2: Paired samples t-test to compare the change in blood sugar on Fasting.

Paired Sample Statistics						t-value	df	p-value
	Blood sugar	mean	N	Std -d	Sd-err.m			
Pair 1	1st month	133..37	30	14.26	2.60	2.61	29	0.014
	2nd month	129.40	30	11.28	2.06			
Pair 2	First month	133.37	30	14.26	2.60	4.17	29	.000
	Third month	124.70	30	12.02	2.19			

Table 2 The data shows mean of the first month value of fasting blood ugar is 133.37 with astandad deviation of 14.26 and second month fasting value is 129.40 with standard deviation of 11.28 .further fasting value of blood sugar in the third month is 124.70 and the standard deviation is 12.02.'t' value of the pair 1 shows as 2.61 with 'p' value 0.014 and for pair 2 't' is 4.17 with p value is 0.000. from the data it is clear that after one month practice of yoga fasting value of the blood sugar decreased about 4 units on an average which is statistically significant at 5% level. After two months practice of yogic exercise it shows about 9 units decreased o an average, which is also statistically significant at 1% level.

Table 3: Change in blood sugar-After food one and half hour–at the end of the third month.

Paired Sample Statistics						t-value	df	p-value
	Blood sugar	mean	N	Std -d	Sd-err.m			
Pair 1	1st month Af	147.00	30	13.68	2.50	4.893	29	.000
	2nd month AF	137.90	30	11.18	2.04			
Pair 2	First month AF	147.00	30	13.68	2.50	6.57	29	.000
	Third month AF	133.23	30	11.05	2.02			

Table 3. Data reveals Mean value of after food blood sugar for pair 1 in the first month is 147.00.And in the second month it is 137.90 .And their standard deviation is in the first month and second month is 13.68 and 11.18 respectively.. And the calculated 't' value for pair 1 is 4.893 and its 'p' value is0.000. where as pair 2 the table shows ,in the third month after food blood sugar mean value is 133.23 with astandard deviation of 11.05. Data further shows mean value has been decreased 9 units on an average in the second month during the practice of yogi exercise which is statistically significant at 1% level of significance. More over end of the third month it shows about a 14 units decrease on an average which is also statistically significant at 1% level.

Table 4: Group Statistics

Gender	N	Mean	SD	SEMn
Change in BS (Fast) Second first				
Male	22	-3.14	5.68	1.21
Female	8	-6.25	13.53	4.78
Change in BS (Fast) Third First				
Male	22	-7.95	9.47	2.02
Female	8	-10.62	16.21	5.73
Change in BS (AF) Seond first				
Male	22	7.18	7.97	1.70
Female	8	-14.38	14.00	4.95
Change in BS (AF) Third First				
Male	22	-12.23	10.23	2.18
female	8	-18.00	14.28	5.05

Table. 4 shows group statistics and a comparison of gender have been worked out. There are 22 male and 8 female participants. The data reveal no significant difference between male and female participants regarding with the decrease in the values of glucose level in the blood. Not only the gender but also there is no effect in the span of the age difference of the participants.

FINDINGS:

Yogic practice and breathing have a noticeable effect on the reduction of value of glucose level in the blood. Neither on gender nor on the span difference in the age have any effect on the reduction of glucose level. Feelings of the patients become pleasant after doing yoga.

Clinical significance is not assured because the blood sugar (value of the glucose) not attained the control level.

CONCLUSION:

Practice of yogic exercise and yogic breathing have been found to be positively correlated with good glyceamic control.. Yoga can improve the quality of life.

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